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The Management of China's Electronics Industry

This paper provides background on the organizations involved in the planning, management, and foreign trade of China's electronics sector.

Leading Group for the Invigoration of the Electronics Industry

In September 1984, Beijing reorganized and renamed the Leading Group for Computers and Large-Scale Integrated Circuits, which had been charged since 1983 with overseeing the development of these products. At the same time, Vice Premier Li Peng replaced Vice Premier Wan Li as the chairman of the Leading Group. In addition, the membership of the Leading Group was broadened. Ranking officials from the State Economic Commission, the State Science and Technology Commission, the National Defense, Science Technology and Industry Commission, the People's Bank of China, and the Ministries of Electronics, Machine Building, Post and Telecommunications, Railroads, and Water Resources and Electric Power all serve on the new leading group. (See Figure 1)

The Leading Group for the Invigoration of the Electronics Industry is charged with strengthening centralized leadership over electronics and information enterprises. Its functions include: formulating development goals and general strategies; approving key plans and supervising their implementation; coordinating research and production, and examining and approving the imports planned for major projects.

The new Leading Group has defined the strategic goal of the electronics industry as developing "microelectronics technology as the foundation, and computer and telecommunications equipment

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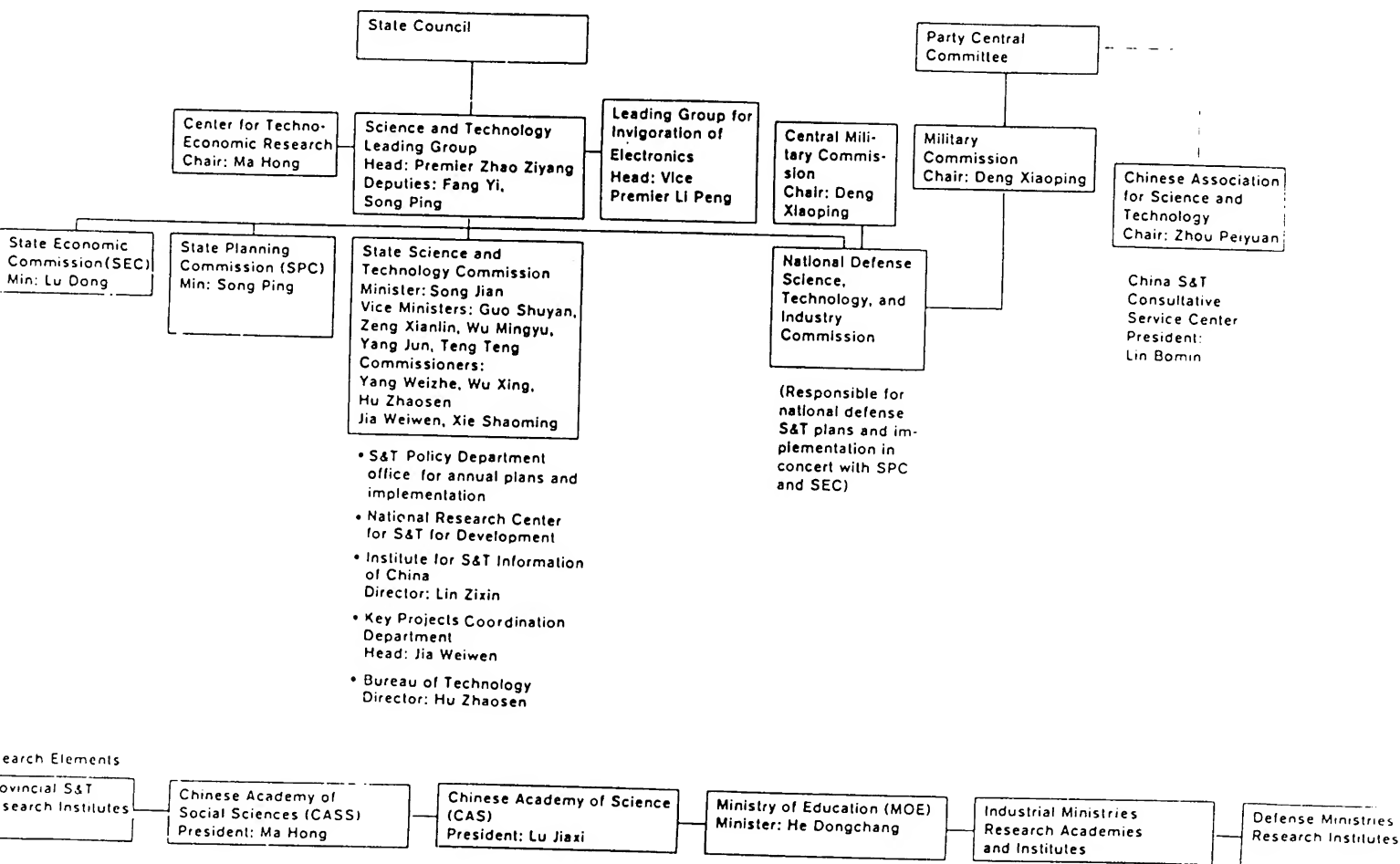
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Figure 1

China's Research and Development Community

Policy Elements



as the main body." The Chinese press reports this goal has been adopted by the State Council and will be emphasized in China's Seventh Five Year Plan (1986-1990), soon to be announced.

The Ministry of Electronics Industry

MEI, formerly the Fourth Ministry of Machine Building, coordinates one of China's most rapidly developing industrial sectors. The Ministry directs applied electronics research and manages the development and production of electronics products for both civilian and military needs.

MEI controls some 2,400 enterprises employing more than 90,000 engineers and technicians and one million additional non-technical personnel. Although MEI manages some of these enterprises directly, control of most of them has been delegated to provincial, municipal, and county organizations, which receive planning guidance from the Ministry. In addition to MEI and to provincial and municipal authorities, the Ministries of Posts and Telecommunications, Astronautics, Machine Building, Light Industry, and the Chinese Academy of Sciences all produce electronic goods for their own uses.

Industrial bureaus subordinate to the MEI include:

- **Bureau of Radar Industry** - responsible for manufacturing various ground, weather, and airborne and shipboard radars.
- **Bureau of Communications, Broadcast and Television** - responsible for communication, navigation and broadcasting equipment, television sets, radios, and tape recorders.
- **Bureau of Computer Industry** - responsible for manufacturing computers, peripherals and related equipment; controls research, production, imports, and product distribution for a number of institutes and factories; provides staff support for and policy recommendations to MEI and the Leading Group; controls China Software Technology Corporation (CSTC) and China Computer Technical Service Corporation (CCTSC)--companies that form joint ventures with foreign firms for software development and for computer maintenance and service.
- **Bureau of Electronic Components and Devices** - responsible for manufacturing vacuum tubes, semiconductor devices, integrated circuits, electronic instruments, special processing equipment, and electronic materials.

Electronics research controlled by the Ministry comes under the direction of four research academies. Institutes conduct research for the academies. At least 55 such institutes are subordinate to the MEI.

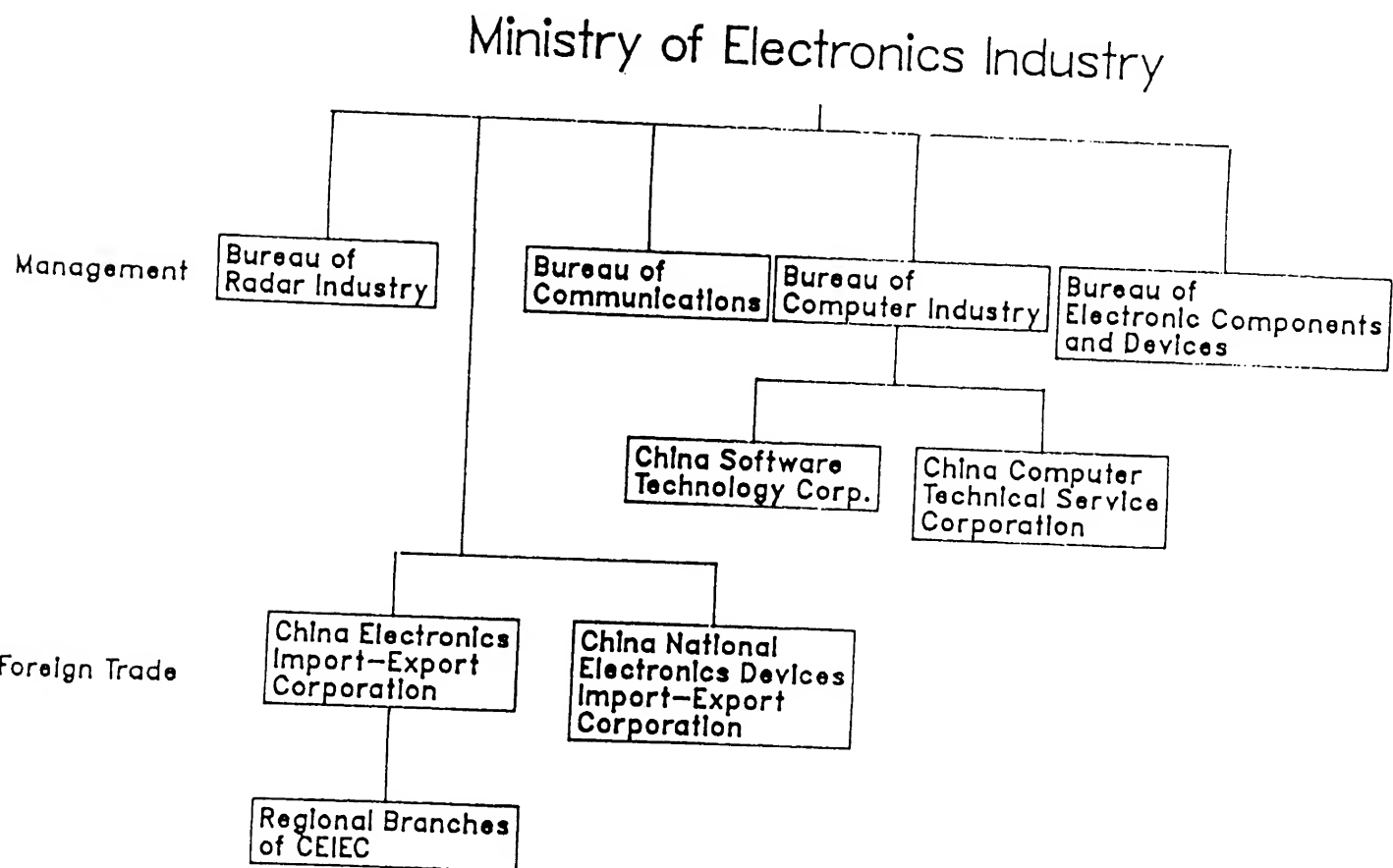
The MEI also controls several specialized import-export corporations to acquire equipment and technology from foreign sources. These include the China Electronics Import-Export Corporation (CEIEC) and the China National Electronic Devices Corporation (CNEDC). CEIEC has branches in Guangzhou, Shenzhen, Shanghai, Tianjin, Beijing, and most provinces. (See Figure 2)

Inter-Ministerial Regional Corporations

Regional electronics corporations, composed of factories and institutes engaged in the production of similar goods, have been or are being formed in major cities. These regional combines are being formed to reduce the duplication of research being done by various institutes, to coordinate factories' imports of equipment and materials, to facilitate the sharing of technical information between institutes and factories, and to ensure that components, computers, and telecommunications equipment are compatible with one another. Examples include:

- **The Nanjing Radio Company**, an integrated complex composed of 37 factories, and provincial and municipal authorities.
- **The Shanghai Software Technological Development Center**, which comprises six universities, two institutes, and various municipal entities.
- **The Shanghai Computer Company**, which includes two computer factories, a telecommunications factory, an instrument factory, a research institute and municipal organizations.
- **The Shenyang Computer United Corporation**, which includes 11 production and research units.

Formation of such regional corporations is only one of the means Beijing is using to remove the institutional barriers to progress in the production of electronic goods. Beijing is now embarked on a major reform of its entire scientific and technological system, aimed at improving the flow of technology between institutes and factories, between military and civilian sectors, and among factories spread across several ministries. To foster the internal transfer of technology, the Chinese leadership is encouraging the mobility of technical personnel, creating financial incentives for institutes to work closely with factories on the development of new products and production techniques, and placing a large number of institutes formerly controlled by the Chinese Academy of Sciences under the direct control of industrial ministries. All sectors are involved in this effort, but the electronics industry is the focal point for many of the reforms.



The Buyers

A large and increasing number of corporations are involved in China's imports of semiconductor production technology and equipment. At the national level, there are several trading corporations under the Ministry of Foreign Economic Relations and Trade, the Ministry of Electronics Industry, and each of the defense industrial ministries. Buying corporations are also operated by the Chinese Academy of Sciences, the National Defense, Science, Technology and Industry Commission, and the State Science and Technology Commission. (See Table 1.)

In addition to the national level trade corporations, the current decentralization of China's foreign trade has given rise to a number of regional or municipal-level trade organizations. The number of local traders is multiplying rapidly, and the value of the purchases many are authorized to make--as well as their authority to sign cooperative production agreements--remains unclear. The regional corporations most actively involved in electronics procurement are located in Shanghai, Tianjin, and the Shenzhen Special Economic Zone.

Table 1

National Electronics Trade Corporations

<u>Corporation</u>	<u>Subordination</u>
China Electronics Import-Export Corporation	Ministry of Electronics Industry (MEI)
China National Electronic Devices Corporation	MEI
China Great Wall Industry Corporation	Ministry of Astronautics Industry (MOAI)
China Precision Machinery Import-Export Corporation	MOAI
China Yanshan Science and Technology Corporation	--
Xiaofeng Technology and Equipment Corporation	--
Xinshidai Company	National Defense Science Technology and Industry Commission (NDSTIC)
Oriental Scientific Instruments Import-Export Corporation	Chinese Academy of Science
China Scientific Instruments and Materials Corporation	State Science and Technology Commission
China Electronic System Engineering Corporation	Ministry of National Defense
China National Instruments Import-Export Corporation	Ministry of Foreign Economic Relations and Trade (MFERT)
China National Technology Import-Export Corporation	MFERT